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NRC WITHDRAWS RULE ON INADVERTENT CRITICALITY
REQUIREMENTS FOR NUCLEAR POWER PLANTS

The Nuclear Regulatory Commission staff has withdrawn a direct final rule that would have given operators of nuclear power plants greater flexibility in demonstrating their ability to ensure against an inadvertent criticality involving fresh fuel. NRC has taken this action after analyzing public comments received since the rule was announced in December.

The new rule would have provided operators of nuclear plants three ways of meeting NRC requirements designed to safeguard against a criticality incident - that is, an uncontrolled chain reaction - with new fuel being handled or stored outside the reactor. Operators could have installed criticality monitors in areas where they are required; demonstrated through analyses and procedural controls that adequate measures had been taken to prevent inadvertent criticality incidents; or elected to comply with certain requirements that would have been incorporated into NRC regulations.

The NRC requires that licensees authorized to possess certain quantities of special nuclear material maintain in each area where these materials are handled, used, or stored, a monitoring system capable of detecting an inadvertent criticality. The purpose of the requirement is to ensure that if such a criticality occurs, personnel would be alerted and would take appropriate action.

Most nuclear power plants were granted exemptions to this requirement during their construction under the terms of the licenses issued to them that permitted the receipt of the initial fuel load for their reactors. Sometimes, these exemptions were not explicitly renewed when operating licenses were issued.

NRC anticipated that the requirements for criticality monitors, designed for fuel fabrication facilities where greater opportunity exists for an inadvertent criticality, might be unnecessary at power reactors because fresh fuel assemblies cannot go critical unless placed in a special configuration in the presence of a moderator, or material that slow down neutrons, thus increasing the likelihood of fission. But the NRC staff decided to withdraw the rule after receiving significant adverse comments from several utilities and the Nuclear Energy Institute, the nuclear industry's Washington-based policy institute. Many licensees complained that the requirements of the rule were not clear.